

PROJECT TITLE : ANALYTICAL INVESTIGATIONS  
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#### TROUBLE-SHOOTING

Headspace analyses (at 25° and 80°C) and carboxylic acid determinations by GC<sup>2</sup> were performed upon request by Product Development on 59 RL, LTR and RCB samples of project TASK. GC<sup>2</sup>-MS identification of the carboxylic acids present has been completed. The correlations between organoleptic and GC analyses of these samples has been examined (ETL, FMO, MUM).

#### METHOD DEVELOPMENT

- A method for nicotine analysis in sidestream smoke has been tested using a bell-shaped sidestream smoke chamber and a variety of trapping systems. Reaction conditions have been optimized (MUM).
- A method for water analysis in tobacco by GC is currently being set up (MUM).
- The feasibility of nicotine quantitation in tobacco by the headspace GC<sup>2</sup> technique is currently being investigated (FMO).
- Work on the HPLC method for underivatized amino acid quantitation has been completed. The method was tested with an experimental sample provided by Biotechnology. The method uses a 5 µm NH<sub>2</sub>-column with a pH 4.0 phosphate buffer and acetonitrile. Concurrent quantitation of glucose and fructose is still under investigation (JJP).

#### SERVICE FOR OTHER GROUPS

- Nicotine and minor tobacco alkaloids were determined in 6 samples submitted by Biotechnology. Total and organic carbon content was also measured in these samples (MUM).
- Routine analyses were performed for Biotechnology on potassium, calcium and magnesium in 15 samples (MUM).

- Nicotine was analysed in the sidestream and the mainstream smoke of 26 cigarette prototypes of project COMPO submitted by Product Development (MUM).
- Upon the request of QC, Freon was analysed in 3 brands from our competitors (FMO).
- Upon request by Product Development PVA has been identified by infrared spectroscopy as cigarette seam glue in a competitor's brand (MUM).

Results were confirmed by GC<sup>2</sup>/MS (ETL).

- The SH index was determined in 4 experimental cigarettes submitted by Biotechnology and in 12 TLA samples (MUM).
- DMN/NPY and NNN/NNK/NatB were analysed in the sidestream smoke of 6 experimental cigarettes of projects SAVOURY and PROTAGORAS (MUM).
- As assistance to project SAVOURY, the carbon monoxide yields in the sidestream and mainstream smoke of 4 experimental cigarettes were determined (JJP).
- The glycerol-propionate-diacetate isomer content was analysed in a Celanese triacetin sample submitted by PM Richmond (YVG).

*for file*

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